Klamath National Forest

Best Management Practices

NATIONAL BMPEP

EVALUATION PROGRAM

WATER QUALITY

MONITORING REPORT FOR KLAMATH NATIONAL FOREST – REGION 5

2017 Fiscal Year

Evaluation of Forest Service administered projects including timber sales, roads, grazing, recreation sites, fuels reduction, and in-channel construction.

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Summary

Fiscal year 2017 was the twenty-sixth year of the Best Management Practices Evaluation Program (BMPEP) on the Klamath National Forest (Forest) and the Forest Service Pacific Southwest Region (Region). This program is designed to evaluate how well the Forest and the Region implement BMPs and

how effectively the BMPs control water pollution from National Forest lands for activities including timber, engineering, range, recreation, minerals, and restoration.

In 2017 the Forest Service began the fourth year of implementation of the National BMP Program, which similar to the Region 5 program, integrates water resource protection into management activities occurring across the landscape but is conducted at the national level. The National Core BMPs are written in broad, non-prescriptive terms, focusing on "what to do", not "how to do it". Applicable State, and local requirements and BMP programs, FS regional guidance, and unit Land Management Plans provide the criteria for site-specific BMP prescriptions. National BMP monitoring began in 2013 as a part of a two-year phase-in process to full implementation. In 2017 the Klamath completed National BMP evaluations for Road Decommissioning, Prescribed Fire, Cable or Aerial Yarding Operations, Completed Aquatic Ecosystem Improvements, Range, and Ground-based Skidding and Harvesting.

The Forest's BMPEP is composed of two sampling strategies. The first is the evaluation of randomly sampled sites. The second strategy is non-random monitoring, in which sites are selected based on management interest in specific ongoing projects. These sites are often evaluated concurrently ("real time") and can be qualitative as well as quantitative. National BMP monitoring evaluations follow National Core BMP Monitoring Technical Guide established by the Washington Office. Each protocol is designed to measure implementation and effectiveness of an activity category that includes from one to six related BMPs. Appendix A is a table that cross-walks each protocol/activity category alpha-numeric code with its name and the BMPs it is designed to monitor.

The National BMP Protocol for 2017 stated that for each forest a minimum of 12 sites up to a maximum of 20 sites are to be sampled over a 2 year period. In 2017 the Klamath evaluated seven sites using five prootcols. Most randomly sampled site evaluations require that 1 to 2 winters have passed prior to completing the field assessment.

BMP Implementation was evaluated to determine whether: (1) we did what we said we were going to do to protect water quality; and (2) project environmental documentation and/or contract/permit language was sufficient to ensure water quality protection. BMP effectiveness was evaluated to determine if water quality protection measures met objectives. The objective for meeting most evaluation criteria is keeping all sediment out of channels and near-channel areas. Sediment deposition presence, volume and proximity to the nearest watercourse were used to indicate level of effectiveness.

In 2017 randomly selected National BMPs were fully implemented at 100% and fully effective at 100% of sites evaluated. Table 1 summarizes the results of the BMP Random Site Evaluation Program for 1992 through 2017.

Table 1. R5 BMP Random Site Evaluation Program from 1992 through 2016

Monitoring Years	Total # of Sites Monitored	Sites Meeting BMP Evaluation Criteria	
		Implementation	Effectiveness

		% Rated Minor departure*	% Rated Fully Successful	% Rated At-risk*	% Rated Fully Successful
1992	53	N/A	55%	N/A	81%
1993	77	N/A	79%	N/A	94%
1994	52	N/A	75%	N/A	89%
1995	77	N/A	83%	N/A	96%
1996	57	N/A	84%	N/A	98%
1997	60	N/A	100%	N/A	98%
1998	54	N/A	65%	N/A	98%

Table 1 Cont'd. BMP Random Site Evaluation Program from 1992 through 2016

Monitoring Years	Total # of Sites Monitored	Sites Meeting BMP Evaluation Criteria			
		Implementation		Effectiveness	
		% Rated Minor departure*	% Rated Fully Successful	% Rated At-risk*	% Rated Fully Successful
1999	38	N/A	66%	N/A	89%
2000	45	N/A	89%	N/A	96%
2001	64	N/A	88%	N/A	95%
2002	53	N/A	92%	N/A	96%
2003	51	N/A	80%	N/A	90%
2004	53	N/A	94%	N/A	100%
2005	48	N/A	96%	N/A	98%
2006	45	N/A	93%	N/A	100%
2007	57	N/A	98%	N/A	96%
2008	50	N/A	78%	N/A	92%

2009	63	N/A	97%	N/A	98%
2010	59	0%	100%	5%	88%
2011	60	7%	85%	3%	92%
2012	61	5%	92%	8%	87%
2013	41	0%	90%	7%	88%
2014	36	0%	83%	6%	83%
2015	28	0%	89%	11%	82%
2016	30	7%	93%	3%	97%
2017	7	N/A	100%	N/A	100%

*2010 was the first year the "Minor departure" and "At-risk" categories were added

2017 BMP MONITORING REPORT

Randomly Selected Sites

On-site evaluations are the core of the BMP Evaluation Program. Such evaluations are necessary to meet the requirements of a Management Agency Agreement between the Region and the State of California. There are 30 different evaluation procedures designed to assess a specific practice or set of closely related practices. Though the evaluation criteria vary based on the management activity, the evaluation process is similar amongst activities. The Regional Office annually assigns the type and number of management activities to be evaluated on each Forest. The specific sites for each evaluated management activity are randomly selected from Forest project pools. When BMP failures occur, corrective actions are taken and documented. Statistical analyses are periodically performed from the collective Regional data, and annual reports of Region wide BMP implementation and effectiveness are presented to the State and Regional water boards. The criteria for sample pool development are regionally standardized by activity type and described in the BMPEP User's Guide.

In 2017 the Forest Service began the fifth year of implementation of the National BMP Program, which integrates water resource protection into management activities occurring across the landscape but is conducted at the national level. In 2017 the Klamath completed National BMP evaluations for Road Equipment Refueling or Servicing Areas, Use of Prescribed Fire, Ground-based Skidding and Harvesting, Cable or Aerial Yarding Operations, Completed Aquatic Ecosystem Improvements, and Grazing Management.

BMP monitoring strives for an interdisciplinary evaluation of projects and actively involves project proponents and watershed personnel. This interdisciplinary effort provides direct feedback to the

project proponent on how well the BMP was implemented and allows for adaptive management on future project designs. Range Conservationist Stephanie McMorris, Hydrologist Chris Ester, and Fish Biologists Brian Thomas and Maija Meneks conducted the 2017 BMP evaluations.

Methods

National BMP monitoring evaluations followed National Core BMP Monitoring Technical Guide established by the Washington Office. Data gathered for each BMP are used to answer specific questions on BMP evaluation forms. Management activities (e.g. timber projects, roads, prescribed fire, tractor piling) to be evaluated must: 1) be implemented under a NEPA decision; 2) adhere to contract requirements; and 3) have been completed at least one but not more than 3 winters prior to evaluation. In-channel construction BMP evaluations are conducted during the activity and immediately after completion.

The timber project sample pools were developed from a list of timber sales, and vegetation management projects completed the previous year. The prescribed fire sample pool was developed from a list of completed prescribed fire projects. The recreation sample pool included all known developed and dispersed recreation sites on the Forest. The grazing sample pool was a list of active grazing allotments on the Forest.

Randomly Sampled Site Results for National BMPs

Seven sites were sampled from within four 6th field watersheds on the Forest (Table 2). The following is a breakdown of the type of activities sampled on timber, recreation, fire, and grazing projects:

Timber Activities

Timber Activities that were evaluated fell into the following activity groups:

Veg A – Ground-based Skidding and Harvesting: Two sites were sampled on one district. Mt. Ashland LSR Unit 240 and Unit 711. Both units passed implementation and effectiveness.

Veg B – Cable or Aerial Yarding Operations: Two sites were sampled on one district. Mt. Ashland LSR Unit 230 and Unit 763. Both units passed implementation and effectiveness.

Fire and Fuel Activities

One Activity Group was evaluated:

Fire A – Use of Prescribed Fire: One site was sampled on one district. First Creek Unit 2. This unit passed implementation and effectiveness.

Grazing

One Activity Group was evaluated.

Range A – Grazing Management: One allotment was sampled on one district. Indian Creek Allotment. This allotment passed implementation and effectiveness.

Recreation Activities

One Activity Group was evaluated:

Rec A – Developed Recreation Sites: One site was sampled on one district. Kangaroo Lake Campground and Day Use Area. This site passed implementation and effectiveness.

Table 3. Summary of 2017 National BMP Implementation and Effectiveness

Form	Project/Site	Implementation	Effectiveness	6th Field Watershed
Fire A	First Creek Unit 2	Implemented	Effective	Horsethief Creek
Veg A	Mt. Ashland LSR Unit 207	Implemented	Effective	Cow Creek-Grouse Creek
Veg A	Mt. shland LSR Unit 711	Implemented	Effective	Cow Creek-Grouse Creek
Veg B	Mt. Ashland LSR Unit 230	Implemented	Effective	Cow Creek-Grouse Creek
Veg B	Mt. Ashland LSR Unit 763	Implemented	Effective	Cow Creek-Grouse Creek
Range A	Indian Creek Allotment	Implemented	Effective	Indian Creek
Rec A	Kangaroo Lake Campground and Day Use Area	Implemented	Effective	Upper East Fork Scott River

BMP Field Notes and Photos.

The following are notes and photos from the Kangaroo Lake Campground and Day Use Area site survey completed by Maija Meneks and Chris Ester on 7/19/2017.

Site selection comments –

The Campground loop and associated sites are greater than 300 feet from Kangaroo Lake, and there are no user trails which connect sites to the lake due to terrain steepness. While on of the walk-in campsites was potentially within 300 feet of the lake, the primary source of impact is from activities along the lakeshore. Therefore, inspection for BMP Effectiveness was focused on the boat ramp and adjoining area where the most use occurs (from campers, fishing, and general day use activities). This area corresponded to a transect that went from cliffs to lake outlet (a distance of about 0.25 miles).

Other comments -

The primary source of sediment along the lake shoreline is heavy use from fishing access and other activities. Although only 330 feet of “user created” trails was evaluated, there are actually quite a bit

more: most of the transect line could be considered a user-created trail, but it fell under the transect evaluation. The evaluated trails were outside the transect line.

The developed trail between fishing platforms has some evidence of past erosion issues, but they have been largely controlled with application of rip-rap. Most sediment from trails outside the 10' AMZ are from (1) user created trails and (2) a primitive (FS) trail that goes to the dam (and beyond). Presumably, the primitive trail has been in better condition in the past, but user access to the lake from it has caused issues. Most, if not all, of sediment issues reported in Q42 that may have come from the trails is reported there.

Trash/dog waste/toilet paper found along shoreline – rare but present. Some trash in the water as well. Also in the water are a few dead fish (gill hooked, offal from cleaned fish, etc.). Likely human waste in the lake too.

All fuel leaks (Q63) are very small and associated with the parking lot and camping area. These engine oil leaks are well away from Kangaroo Lake.

Note on Q18 – unknown when Kangaroo Lake was formally established. This is an area with a long history of use.

Photo List
P1 – View along lakeshore transect area, from cliffs.
P2 - View along lakeshore transect area, from cliffs.
P3 – Example of erosion issues due to heavy lakeshore use
P4 - Example of erosion issues due to heavy lakeshore use
P5 – Lakeshore transect near boat ramp
P6 - Lakeshore transect near boat ramp
P7 – Example of extensive erosion due to lakeshore use
P8 – Transect area near fishing pier
P9 - Transect area near fishing pier
P10 – Forest Service trail example (primitive)
P11 - Forest Service trail example (paved)
P12 – Trail example (user created)
P13 – Engine oil spots in parking lot

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P13 – Engine oil spots in parking lot

Adaptive Management Discussion

Practices That Are Working Well

All of the activities evaluated in 2017 met BMP compliance and were effective at controlling nonpoint pollution. These included all timber sale activities; range management activities, fire and fuels activities, and recreation sites. For activities where Best Management Practices were fully implemented and effective, no modifications are recommend for future projects.

BMP Sites from 2017 that will be rolled over into 2018

One site that was scheduled to be completed in 2017 but was not, will be rolled over into 2018. This Rec –A site was not completed because the person who normally would have supplied the information for part of the effectiveness portion of the evaluation was not available.

References

USDA, Forest Service, 2002, Investigating Water Quality in the Pacific Southwest Region: the Best Management Practice Evaluation Program (BMPEP) User's Guide, USDA, Forest Service, Pacific Southwest Region.

Appendix A. BMP Evaluation Procedure Names and Descriptions

Procedure #	*National Procedure Name (BMPs Monitored)*
Range A	Grazing Management (BMPs Range-1, Range-2, and Range-3)
Vegetation A	Ground-based Skidding and Harvesting (BMPs Veg-1, Veg-2, Veg-3, Veg-4, Veg-6, Veg-7, and Fac-6
Vegetation B	Cable or Aerial Yarding (BMPs Veg-1, Veg-2, Veg-5, Veg-6, Veg-7, and Fac-6)
Rec A	Equipment Refueling or Servicing Areas (BMPs Road-1, Road-2, Road-10, Fac-2, and Fac-8)
Fire A	Use of Prescribed Fire (BMPs Fire-1, and Fire-2)